

REMARKS

Claims 1-20 previously were pending, including independent claims 1, 8 and 15. All claims are rejected on the basis of the same prior art as before, although the Office Action has provided further explanation of the rejection (at pages 3-5). In particular, claims 1, 7-8, and 15 are rejected under 35 U.S.C. § 103(a) as obvious over Fujii in view of Keiller, and claims 2-6, 9-14, and 16-20 are rejected under 35 U.S.C. § 103(a) as obvious over Fujii in view of Keiller and further in view of Bi.

Independent claims 1, 8 and 15 are now amended to include the feature of dependent claims 2, 9 and 16, respectively. Claims 2, 9, 10 and 16 are cancelled. Applicants submit that the claims as amended are patentable over the cited art.

Claim 1 recites "generating, from speech data for which speech recognition is to be performed, a plurality of pieces of speech data whose start positions of non-speech regions differ." Claim 8 recites, "a speech data generation section for generating, from speech data for which speech recognition is to be performed, a plurality of pieces of speech data whose start positions of non-speech regions differ." Similarly, claim 15 recites, "a speech data generation section for generating, from speech data for which speech recognition is to be performed, a plurality of pieces of speech data whose start positions of non-speech regions differ." Referring to the limitation added to claim 1 as representative, the plurality of pieces of speech data whose start positions of non-speech regions differ are generated from the speech data for which speech recognition is to be performed by sequentially shifting the start position of the non-speech region from the start position of the speech region back to a position preceding by a predetermined time.

Applicants submit that the cited art does not disclose or suggest these claimed features. Fujii describes a speech recognition apparatus that attempts to reduce erroneous recognition due to noise by detecting one or more different speech periods (e.g., at Abstract; col. 4, lines 7-16). However, the Office Action acknowledges that Fujii does not generate a recognition result based on the most frequent recognized result, but instead selects a best overall candidate word based on pattern matching. Keiller describes a speech recognition system in which a single piece of speech data is passed through a plurality of speech recognition engines, and a most commonly occurring

recognition result is selected as the most likely interpretation (e.g., col. 2, lines 4-8; col. 20, line 47 to col. 21, line 10), but Keiller does not describe generating a plurality of pieces of speech data with different start positions. The Office Action concludes that it would have been obvious to combine these features of the prior art to result in Applicants' independent claims, although the prior art references do not suggest this combination and the Office Action does not articulate any specific rationale to make this combination. Factual findings made the Examiner and articulated reasoning are necessary underpinnings to establish obviousness and must be made explicit. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007); Examination Guidelines for Determining Obviousness, 72 Fed. Reg. 57,526, 57,528 (Oct. 10, 2007); 35 U.S.C. § 132. A mere conclusory statement cannot support the legal conclusion of obviousness. 127 S. Ct. at 1741. Rather, the Examiner must identify how a person of ordinary skill in the art would, by known methods, combine the elements in the way the claims invention does. *Id.*; 72 Fed. Reg. 57,526, 57,528 (Oct. 10, 2007).

Regarding the feature from claims 2, 9 and 16 that is added to the independent claims, the Office Action asserts that the combination of Fujii and Bi discloses this feature. Applicants respectfully disagree. As the Office Action concedes (at pg. 5), Fujii does not disclose obtaining different speech period segments by shifting backwards. Indeed, Fujii is silent on how specifically to determine different beginning and terminating end points of speech. Moreover, the passage in Bi relied upon by the Office Action (col. 5, lines 12-31) is not applicable. This passage merely notes that the signal data are stored in a buffer because the processor performs real-time processing but must be able to look back a certain number of speech frames.

In particular, Bi does not describe sequentially shifting backwards to obtain a plurality of starting points. Bi uses a first signal-to-noise ratio (SNR) threshold value to identify a "first starting point" and a "first ending point" that are not endpoints of the speech data but are instead only interim calculation points ("PRE_START" and "PRE_END"). Then, Bi uses a second, smaller SNR threshold value to determine the "actual" starting and ending points of the speech data (e.g., Abstract, col. 4, lines 37-57; col. 6, lines 15-39; col. 7, lines 24-30).


Bi notes that in conventional voice recognition devices, the endpoint detector relies upon a single SNR threshold to determine the endpoints of a piece of speech.

However, setting the SNR threshold too low may make the device too sensitive to background noise, whereas setting the SNR threshold too high may miss part of the beginning or ending of speech (col. 2, lines 21-37). Bi, in contrast, "uses multiple, adaptive SNR thresholds to accurately detect the endpoints of speech in the presence of background noise" (col. 2, lines 42-44). Thus, Bi explicitly states that it only determines one actual starting point and one actual ending point.

In short, none of the cited references describes or suggests determining multiple different start positions by sequentially shifting back from a start position of the speech region of speech data by a predetermined time. Thus, even if the references were to be combined, at least this feature of Applicants' invention would still be missing. Any other conclusion would appear to be based on hindsight analysis in view of Applicants' claimed invention, which is to be avoided. "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR Int'l. Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742 (2007).

Accordingly, Applicants submit that the claims as amended are patentable over the cited art. Applicants respectfully request reconsideration and allowance of this application. If the Examiner believes the application still is not in condition for allowance, he is requested to telephone Applicants' undersigned attorney at 312-321-4723.

Respectfully submitted,


James P. Naughton
Registration No. 30,665
Attorney for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200